

What is claimed is:

Claims

1. A method for maintaining SIP contact addresses:
sending, by a SIP proxy user agent (UA), a first registration
5 message for a remote unit to a SIP registrar;
sending a second registration message for the remote unit to the
SIP registrar;
receiving, in response to the second registration message, a
response that indicates a contact address more recent than any provided
10 by the SIP proxy UA; and
sending, in response to the received response, a deregistration
message for the remote unit to the SIP registrar.
2. The method of claim 1 further comprising receiving, by the SIP
15 proxy UA, a non-SIP registration request from the remote unit prior to
sending the first registration message.
3. The method of claim 1 wherein the second registration message is
sent in response to a registration timer expiration.
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4. The method of claim 1 wherein the first registration message
comprises a SIP REGISTER message.
5. The method of claim 4 wherein the SIP REGISTER message
25 indicates that it comprises a new contact address.
6. The method of claim 1 wherein the second registration message
comprises a SIP REGISTER message.

7. The method of claim 1 wherein the response that indicates a contact address more recent than any provided by the SIP proxy UA comprises a SIP 200 OK message and at least one creation time stamp.

5 8. The method of claim 7 wherein the response further comprises a group of contact addresses and a creation time stamp for each.

9. The method of claim 1 wherein the deregistration message comprises a SIP REGISTER message with an Expires header value of
10 "0".

10. A method for maintaining SIP contact addresses:

receiving a first registration message for a remote unit from a first SIP proxy user agent (UA);

5 storing, as a member of a group of contact addresses for the remote unit, both a first contact address based on the first registration message and a first creation timestamp for the first contact address;

receiving a second registration message for the remote unit from a second SIP proxy UA after receiving the first registration message;

10 storing, as a member of the group of contact addresses for the remote unit, both a second contact address for the remote unit and a second creation timestamp for the second contact address;

receiving a third registration message for the remote unit from the first SIP proxy UA;

15 sending, in response to the third registration message, a response that indicates a contact address more recent than any provided by the first SIP proxy UA;

receiving a deregistration message for the remote unit from the first SIP proxy UA; and

20 removing, from the group of contact addresses for the remote unit, the first contact address.

11. The method of claim 10 wherein the response that indicates a contact address more recent than any provided by the first SIP proxy UA comprises a SIP 200 OK message and at least one creation time stamp.

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12. The method of claim 11 wherein the response further comprises a group of contact addresses and a creation time stamp for each.

13. The method of claim 10 wherein the first registration message comprises a SIP REGISTER message, the second registration message comprises a SIP REGISTER message, and the third registration message comprises a SIP REGISTER message.

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14. The method of claim 10 wherein the deregistration message comprises a SIP REGISTER message with an Expires header value of "0".

15. A radio access network (RAN) component comprising:
a wireless network interface; and
a SIP proxy user agent, communicatively coupled to the wireless network interface, adapted to
- 5 receive a registration request from a remote unit via the wireless network interface,
send a first registration message for the remote unit to a SIP registrar,
send a second registration message for the remote unit to the SIP
- 10 registrar,
receive, in response to the second registration message, a response that indicates a contact address more recent than any provided by the SIP proxy UA, and
send, in response to the received response, a deregistration
- 15 message for the remote unit to the SIP registrar.

16. A SIP registrar comprising:

a SIP location data base; and

a SIP location processor, communicatively coupled to the SIP registration data base, adapted to

5 receive a first registration message for a remote unit from a first SIP proxy user agent (UA),

 store in the SIP location data base, as a member of a group of contact addresses for the remote unit, both a first contact address based on the first registration message and a first creation timestamp for the first
10 contact address,

 receiving a second registration message for the remote unit from a second SIP proxy UA after receiving the first registration message,

 storing in the SIP location data base, as a member of the group of contact addresses for the remote unit, both a second contact address for
15 the remote unit and a second creation timestamp for the second contact address,

 receiving a third registration message for the remote unit from the first SIP proxy UA,

 sending, in response to the third registration message, a response
20 that indicates a contact address more recent than any provided by the first SIP proxy UA,

 receiving a deregistration message for the remote unit from the first SIP proxy UA, and

 removing, from the group of contact addresses for the remote unit,
25 the first contact address.